Lead Poisoning in Rhode Island: The Numbers

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2002 Edition

Rhode Island Department of Health

Introduction

While lead poisoning rates have been consistently declining over the last decade, nearly 1 in 12 Rhode Island children still have a blood lead level exceeding CDC's standard for concern, a rate at least twice that of the national average. Children living in our state's urban areas and children of certain racial and ethnic backgrounds have lead poisoning rates substantially higher than the state average. These poisoned children face potentially life-long effects resulting from their lead exposure including decreased IQ and an increased risk for behavioral and learning difficulties. Despite substantial advancements in screening, the case management of lead poisoned children, and the removal of lead hazards in homes, much work remains to be done to eliminate disparities and reduce the prevalence of this condition. The information in this booklet provides a snapshot of both from where we have come and what remains to be accomplished. It is our hope that it will remind the reader of the continuous need to protect Rhode Island's children from the dangers of lead poisoning.

Understanding Lead Data

By law, all Rhode Island children are required to be screened annually for lead between the ages of nine months and six years. Blood tests are generally required, although under certain circumstances a risk assessment survey can be substituted after age 3. To provide for adequate monitoring and study by the Health Department, all screening tests must be processed by the state laboratory or one of two hospital based labs approved by the state. The results of these tests provide the foundation for most of the data presented in this booklet. It is important to recognize that we have no information on the blood lead levels of children who are not tested, thus the rates in this booklet are only for the tested population.

The blood lead level (BLL) is measured as the micrograms of lead per deciliter of whole blood (abbreviated μg/dL or mcg/dL). The CDC has set 10μg/dL as the level at which community level interventions should be implemented. Recent research shows the potential for deleterious effects from lead at levels below 10μg/dL, and since there is no nutritional value to lead, the goal should be as low a level as possible for every child. Rhode Island currently provides in-home lead education to the families of children with BLLs of 15μg/dL or higher. Full case management and environmental investigation services are offered to significantly lead poisoned children, defined as those with persistent levels of 15 to 19μg/dL (two tests in that range more than 90 days apart) or a single result of 20μg/dL or above.

Lead can be measured in either venous blood (collected with a hypodermic needle) or capillary blood (collected using “fingersticks”). Fingersticks, while less painful for the child, have a greater potential for false positives. Thus, the intervention levels set by Rhode Island (with the exception of the persistent level) require a venous sample. Doctors are encouraged to perform venous tests on children with high capillary values. Unless otherwise noted, the data in this booklet does not distinguish between venous and capillary results.

Screening Rates

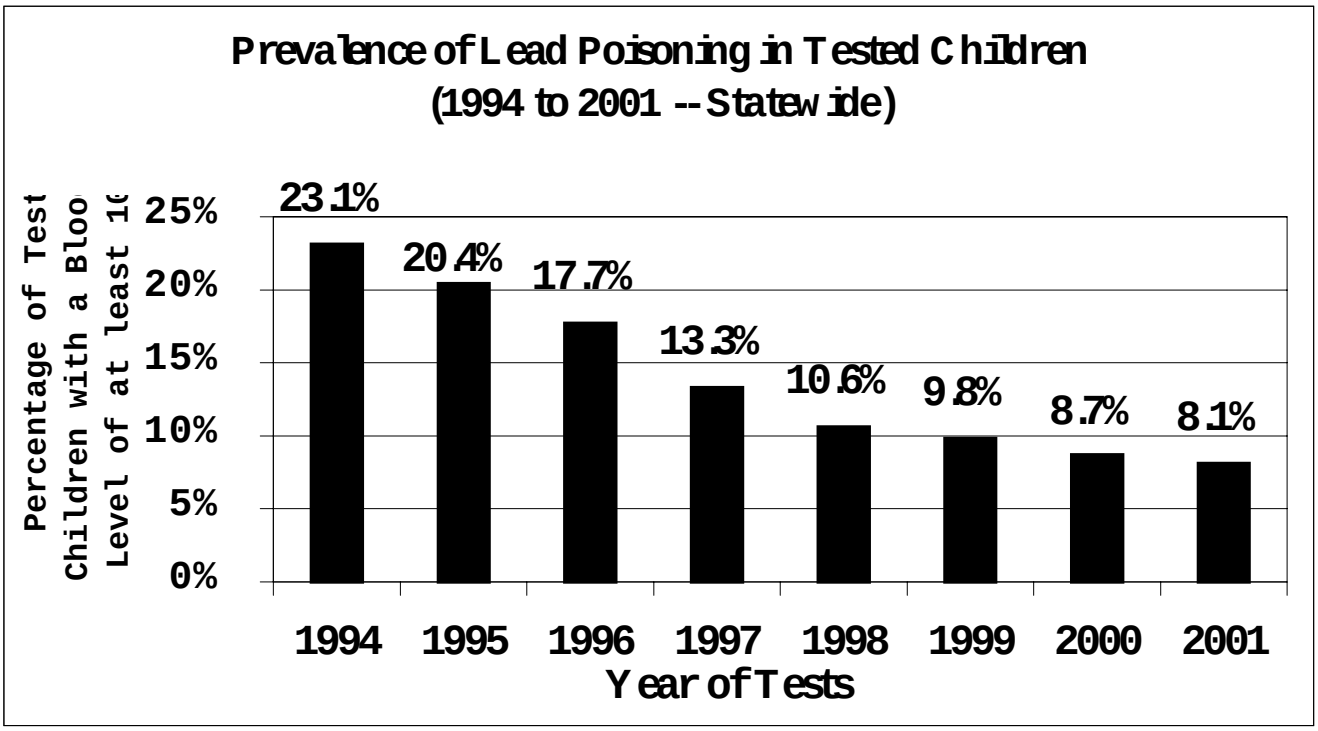
- Locating an accurate estimate of the total number of children in various sub-populations of the state can be challenging, and thus most attempts to calculate a screening rate are limited to certain easily definable groups of children.
- KIDSNET provides us with a count of all children born in RI starting in 1997, with records added for children born out of state who utilize a participating program or pediatrician.
- 77.9% of the 43,401 children in KIDSNET who turned one by June of 2001 had at least one lead test.
- There were no substantial difference in screening rates by race or ethnicity
- Screening rates by town vary widely, however, from a low of 62.5% in Westerly to a high of 88.5% in South Kingstown.
- However, rates do NOT vary by urbanization – cities, suburbs, and rural areas as a whole have similar rates
- A 2001 study[1] of 19 to 35 month old children in Medicaid funded managed care programs in Rhode Island showed 80% had at least one lead test.
- Rhode Island's screening rates are amongst the best in the country – Massachusetts' screening rate for 2000 was 74% and less than 20% of Medicaid-eligible children are screened nationally.

[1] Vivier PM, Hogan JW, Simon P, Leddy T, Dansereau LM, Alario AJ. "A statewide assessment of lead screening histories of preschool children enrolled in a Medicaid managed care program." *Pediatrics* 2001 Aug;108(2):E29

Prevalence of Elevated Blood Lead Levels

(≥ 10μg/dL) in Rhode Island Children

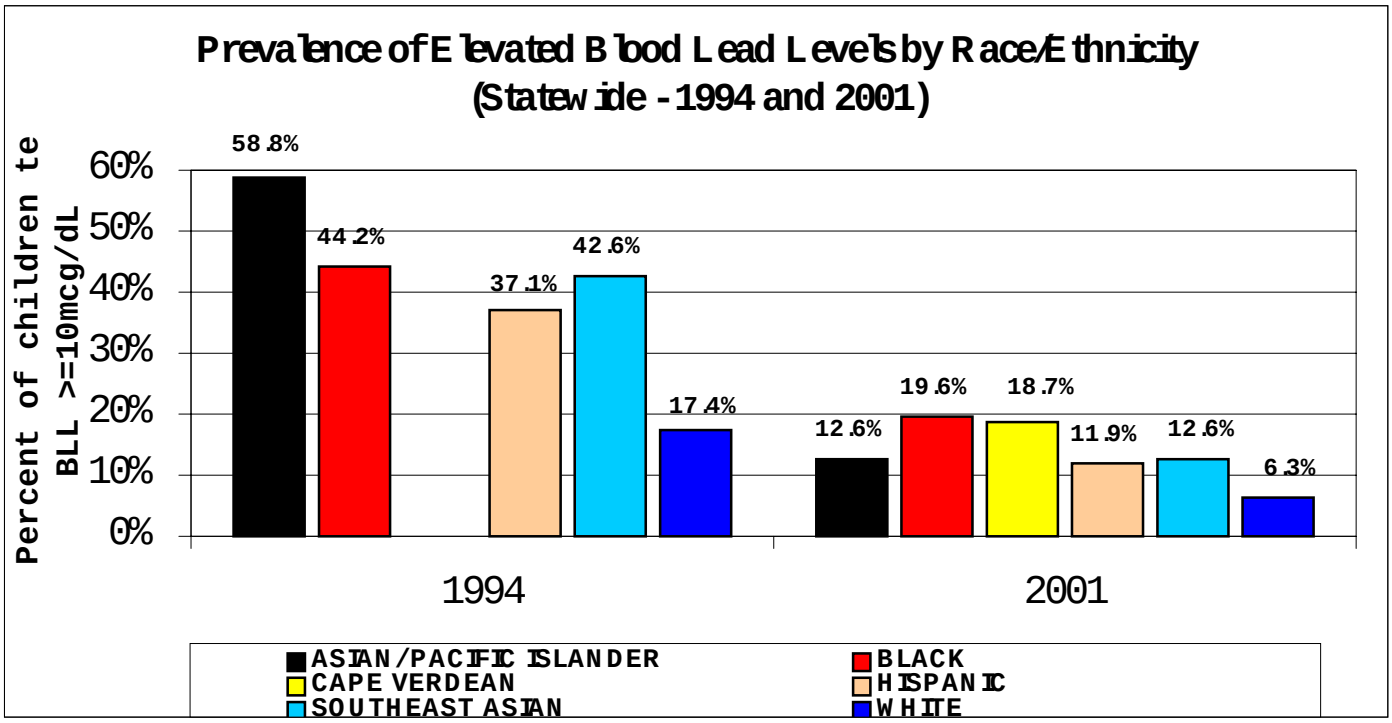
- The percentage of tested children under 6 years of age with high levels of lead continues to decline
- Rhode Island's rates, however, remain substantially higher than the national average (4.4% in 1994 – likely to be substantially lower now).



(Prevalence calculated using the highest BLL value a child had in each year. Children with out of state and invalid addresses have been removed.)

Disparities in Prevalence Rates by Race/Ethnicity

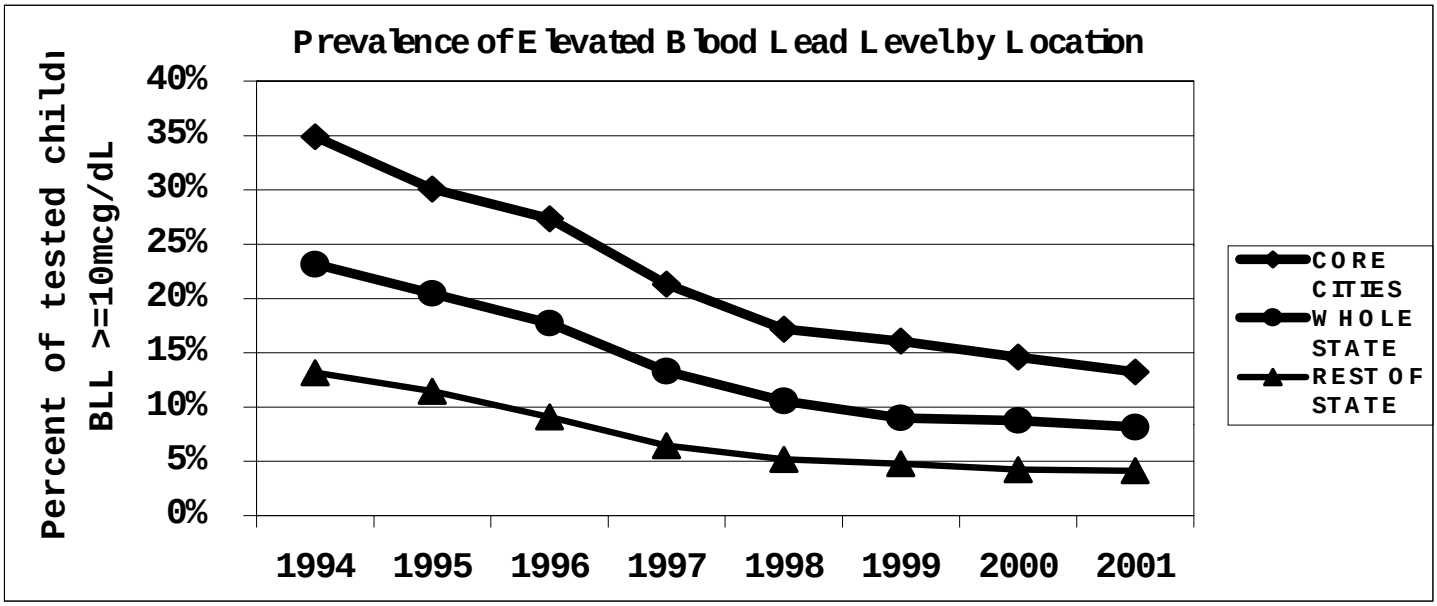
- While the prevalence of lead poisoning continues to decline amongst all groups, substantial disparities remain between various groups. Racial and ethnic minorities face substantially increased rates of lead poisoning.
- Racial disparity in lead poisoning is primarily a result of the relative high density of non-white populations in our core cities where lead exposure from old housing is highest. This is supported by the fact that there is almost no difference in poisoning rates by race or ethnicity amongst Providence residents.



(There were too few Cape Verdean children tested in 1994 to yield meaningful results. Race/Ethnicity data comes both from lead screening records and KIDSNET.)

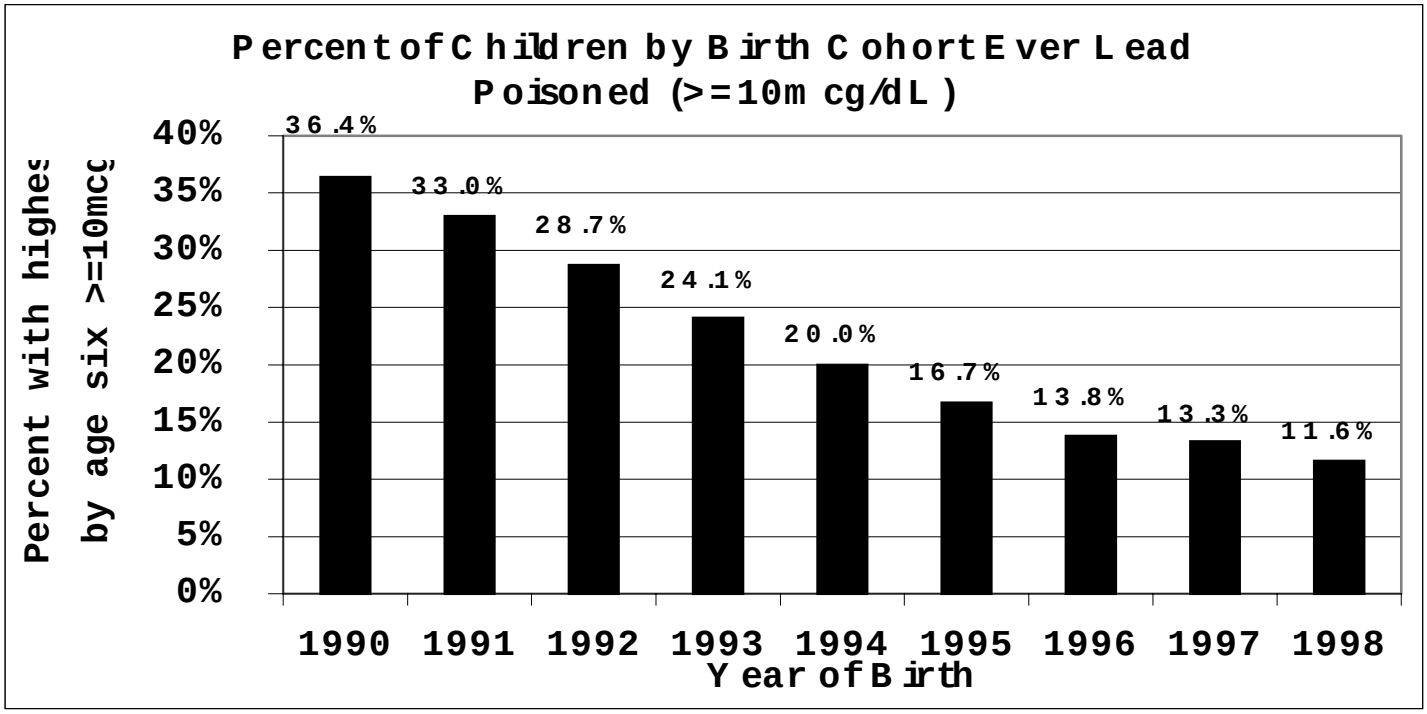
Disparities in Prevalence by Urban Location

- Lead poisoning is substantially more common in our urban areas – In the core cities of Central Falls, Newport, Pawtucket, Providence, and Woonsocket, the average prevalence rate in 2001was 13.2% as opposed to 4.1% for the rest of the state excluding these five cities.
- Rates for each of Rhode Island's 39 cities and towns are available on the web: http://www.healthri.org/family/lead/home.htm



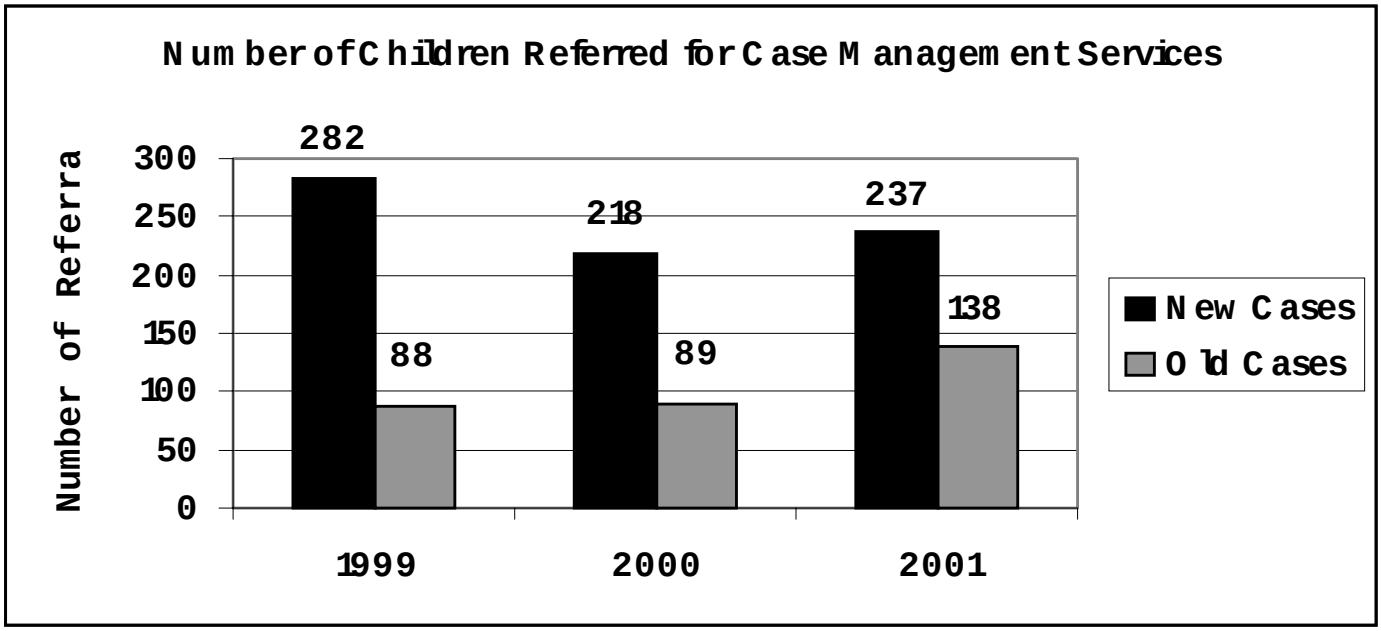
Lead Poisoning Incidence by Birth Cohort

- This presents the percentage of children, by birth cohort, whose highest test result before age six was elevated (≥10µg/dL)
- Data for children born in 1995 or earlier is complete – however, since most elevated blood lead levels occur before age three, preliminary data is presented up to the 1998 cohort.
- More than 1 in 3 children statewide born in 1990 were lead poisoned at some point, compared to 1 in 6 born in 1995, with preliminary results suggesting less than 1 in 8 born in 1998 will ever be lead poisoned.
- In Providence, over 1 in 4 children born in 1995 were poisoned and over 1 in 5 born in 1998 have been poisoned.



Case Management of Lead Poisoned Children

- Children with significantly elevated blood leads are referred to the HELP Lead Safe Center (for Providence area families) or the Family Outreach Program operated by a visiting nurse agency (for other areas of the state) for comprehensive case management services. The lead center received nearly 75% of the referrals in 2001.
- The increase from 2000 to 2001 is largely a result of changing the definition of significantly elevated to include persistent levels of 15 to 19 in addition to venous levels of 20 or higher in July of 2001.
- Additionally, in 2001, 267 children with a single venous level of 15 to 19 were referred to the family outreach program for preventative lead education and 2,383 children with lead levels over 10 were mailed educational brochures.



Environmental Inspections

- Environmental inspections are performed in the homes of significantly lead poisoned children to identify lead hazards in violation of State regulation. Starting in July 2001, persistent levels greater than 15 were considered significant.
- The Health Department works with owners to achieve compliance with lead safe requirements. If necessary, the Department will issue citations, place liens on the property, and refer the case for prosecution by state or local authorities to achieve full compliance.
- For a variety of reasons, some families choose not to let an inspector in, although efforts to reach the family via case management will continue. The Department does not enforce compliance if the parent/guardian is the owner of the property, but will offer technical advice and clearance inspections.
- Starting in September of 2001, soil abatement became a required element to close environmental cases.

	1997	*1998*	*1999*	*2000*	*2001*
Number of Inspections Performed	84	311	263	208	221
Status of Inspected Properties (as of 2/02)					
No violations found	7	8	4	4	8
Lead hazards completely abated	35	136	86	81	40
Abatement is complete pending soil remediation	13	50	48	34	6
Referred to AG or local authorities for prosecution	13	46	46	38	21
Case remains open with Department of Health	3	5	5	5	80
Enrolled in a HUD program, awaiting abatement	0	8	12	4	5
Exterior has been abated, the interior is pending	0	3	4	1	5
Interior has been abated, the exterior is pending	5	15	17	14	23
The parent is the owner so the case is not prosecuted	8	37	38	26	33
Other	0	3	3	1	0
Tenant Refused Inspection	3	87	50	46	74
TOTAL INSPECTIONS OFFERED	87	398	313	254	295

Tell Us What You Think!

Please take a few minutes to answer the following questions and then fax this page to Patrick MacRoy at (401) 222-6953 or mail it to the address on the last page. Your responses will help us to provide the most useful information in future editions of this booklet. Thank you!

1. Please tell us about yourself. Are you (circle one):
   A health care provider
   A social service provider
   School Personnel
   Other:_____

2. Have you accessed the Lead Program's website? Yes____ No_____ Not Sure_____

3. What information in this booklet did you find the most useful and why?

4. What information in this booklet did you find the least useful?

5. Was the information in this booklet presented in a clear and understandable fashion?

6. What additional information would be useful to include in future editions of this booklet?

For More Information on Lead Poisoning Data Contact:

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For General Information on Lead Poisoning:

Visit our website at: www.healthri.org/family/lead/home.htm
Or call the Family Health Information Line at: 1-800-942-7434